Washington State Department of Labor & Industries
Division of Occupational Safety and Health

Keep Washington safe and working

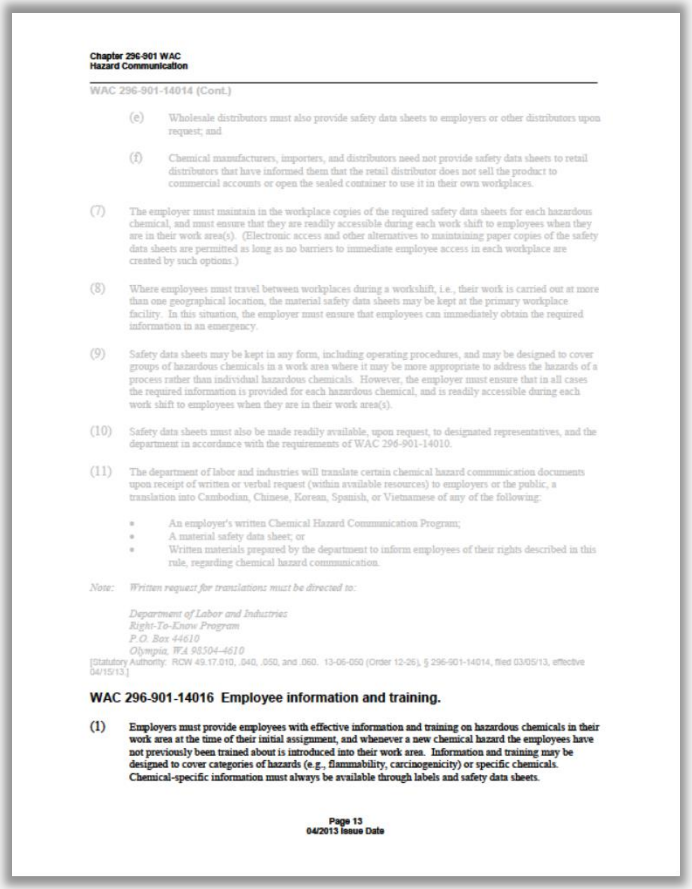
TRAINING KIT FOR: Hazard Communication 2013 Update

Employee training
WAC 296-901-14016

Hi! This Training Kit will assist you with meeting the requirements for Employee information and training in the updated Hazcom rules.

WAC 296-901-14016

Employee information and training.



Chapter 296-901 WAC
Hazard Communication

WAC 296-901-14014 (Cont.)

(e) Wholesale distributors must also provide safety data sheets to employers or other distributors upon request; and

(f) Chemical manufacturers, importers, and distributors need not provide safety data sheets to retail distributors that have informed them that the retail distributor does not sell the product to commercial accounts or open the sealed container to use it in their own workplaces.

(7) The employer must maintain in the workplace copies of the required safety data sheets for each hazardous chemical, and must ensure that they are readily accessible during each work shift to employees when they are in their work area(s). (Electronic access and other alternatives to maintaining paper copies of the safety data sheets are permitted as long as no barriers to immediate employee access in each workplace are created by such options.)

(8) Where employees must travel between workplaces during a workshift, i.e., their work is carried out at more than one geographical location, the material safety data sheets may be kept at the primary workplace facility. In this situation, the employer must ensure that employees can immediately obtain the required information in an emergency.

(9) Safety data sheets may be kept in any form, including operating procedures, and may be designed to cover groups of hazardous chemicals in a work area where it may be more appropriate to address the hazards of a process rather than individual hazardous chemicals. However, the employer must ensure that in all cases the required information is provided for each hazardous chemical, and is readily accessible during each work shift to employees when they are in their work area(s).

(10) Safety data sheets must also be made readily available, upon request, to designated representatives, and the department in accordance with the requirements of WAC 296-901-14010.

(11) The department of labor and industries will translate certain chemical hazard communication documents upon receipt of written or verbal request (within available resources) to employers or the public, a translation into Cambodian, Chinese, Korean, Spanish, or Vietnamese of any of the following:

- An employer's written Chemical Hazard Communication Program;
- A material safety data sheet; or
- Written materials prepared by the department to inform employees of their rights described in this rule, regarding chemical hazard communication.

Note: Written request for translations must be directed to:

Department of Labor and Industries
Right-To-Know Program
P.O. Box 44610
Olympia, WA 98504–4610

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 13-06-050 (Order 12-26), § 296-901-14014, filed 03/05/13, effective 04/15/13.]

WAC 296-901-14016 Employee information and training.

(1) **Employers must provide employees with effective information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new chemical hazard the employees have not previously been trained about is introduced into their work area. Information and training may be designed to cover categories of hazards (e.g., flammability, carcinogenicity) or specific chemicals. Chemical-specific information must always be available through labels and safety data sheets.**

Page 13
04/2013 Issue Date

Click on this page to open a new window with a PDF copy of the Employee information and training requirements.

Photo by Adam Jones, Ph.D. in CreativeCommons

Contents

- *What's new in Hazcom Training Requirements?*
- ***GET READY!*** *for the required employee training*
- ***SET! -*** *Use these slides to develop your own training*
- ***GO!*** *train everybody*
- ***EVALUATE*** *for effectiveness*
- *Web links to useful tools and L&I specialists*

Washington State Department of Labor & Industries
Division of Occupational Safety and Health

Keep Washington safe and working

What's new in Hazcom Training Requirements?

Review section

WAC 296-901-14016

Employee information and training.

Basically the same training requirements

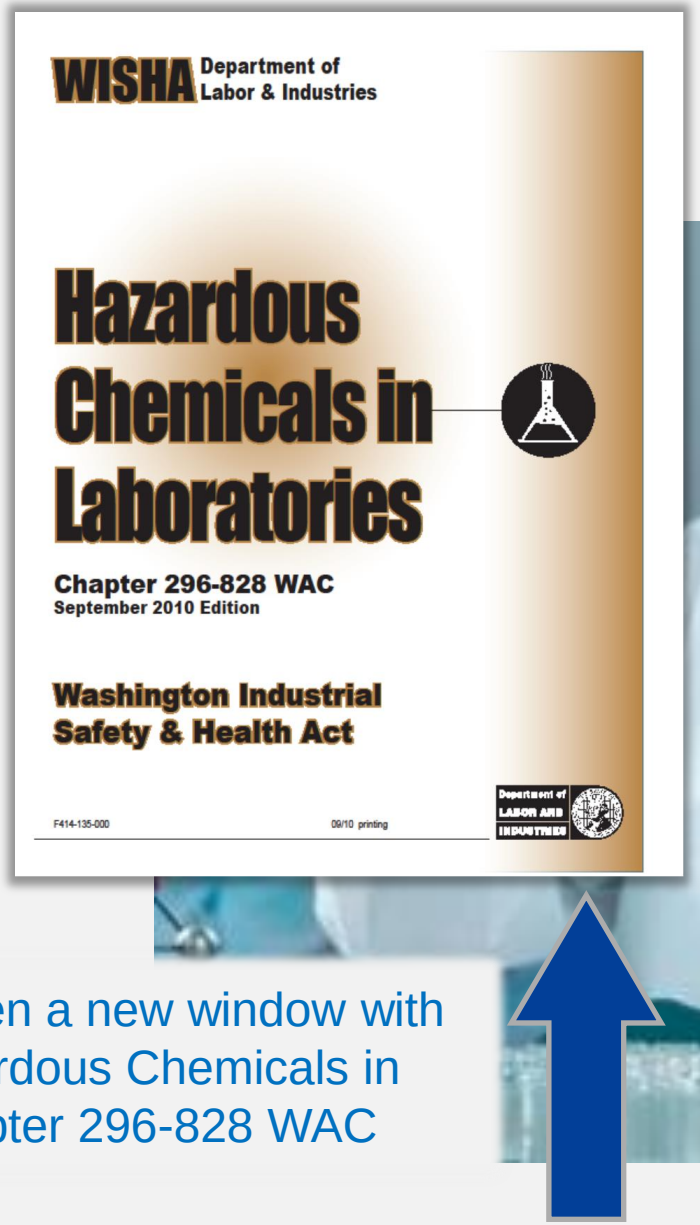
- LABELS.

  Employees must be able to interpret the New Labels content and format;

- SAFETY DATA SHEETS.

  Employees must be able to follow the standardized format

If you work in a laboratory, training requirements in Chapter 296-828 must be followed by your site Chemical Hygiene Plan (CHP).



Click on this book to open a new window with a PDF copy of the Hazardous Chemicals in Laboratories rules, Chapter 296-828 WAC

If you already have a working Hazcom Program in place…

…just skip to the slides with information on the updates to the Hazcom required Employee training and information, a.k.a. GHS, short for…

Globalized **H**armonization **S**ystem.

Click on the cheetah to swiftly get to the materials you need…

Photo by Judith in CreativeCommons

GET READY!

Follow these steps to prepare for your own training,

GET READY!

Follow this checklist!

I need to make sure that…	☺
1. Computer and internet are working	☺
2. Projector, screen and slideshow ready, or	☺
3. Flipchart and handouts available at the training site	☺
4. Basic information from Hazcom rules was reviewed	☺
5. SDS copies are available for discussion	☺
6. SDS binders or in computer are ready at convenient access points in the worksite	☺
7. I brought chemical containers with new labels for discussion	☺
8. The areas list where hazardous chemicals are in use are posted and visible	☺
9. The list of hazardous chemicals indicating areas of use and storage is available and updated	☺
10. Sampling reports copies are available for discussion	☺
11. Sign-in sheet and employees roster for keeping records of this training	☺

Meeting Hazcom Training Requirements

You must also include information specific to your worksite as indicated in Slides with this symbol 

Look for this symbol in slides # 64, 65, 70, 71, 89, 90 and 95 of this slideshow, to fully meet the training requirements for Hazard Communication

Photo by Tracy Hunter in CreativeCommons

SET!

Invite workers to meet for this training; find an adequate location to have a focused discussion,…don't forget to bring all the props you prepared.

Meeting DOSH Training Requirements

- Preview this program and include your specific workplace information before conducting the training

- You may keep an attendance roster for your records to document training

How to use this PowerPoint Slideshow

- You can download, edit, and use these slides for training,
- You may need a laptop computer with PowerPoint and a projector,
- If you want to print out these slides, the PDF file uses less computer memory and prints faster,

How to use this PowerPoint Slideshow

- Review, practice the instructor's notes under each slide
- You can read the text in quotations or use your own words
- Additional information is also found in the notes under each slide

GO!

You are performing! Planning and rehearsing is paying off. Your employees will remember a fun, rewarding experience.

This training will cover the following:

- What are hazardous chemicals
- How hazardous chemicals affect the body
- What are the different types of hazardous chemicals

This training will cover the following:

- What is on product labels
- What are Safety Data Sheets
- How to protect yourself from hazardous chemicals.

What is Hazard Communication?

a.k.a. "Hazcom"

What is hazard communication?

- Hazard communication or “Hazcom” is our company program where we tell you about the hazardous chemicals used in our workplace.

What is hazard communication?

- You will learn how to protect yourself from the effects of these hazardous chemicals.
- Hazcom training is required by L & I* – DOSH**.

  - *L&I: Department of Labor and Industries
  - **DOSH is the Division of Occupational Safety and Health

What is a hazardous chemical?

- A hazardous chemical is any chemical that can do harm to your body.
- Most industrial chemicals can harm you at some level.
- It depends how much gets into your body.

How do hazardous chemicals affect the body?

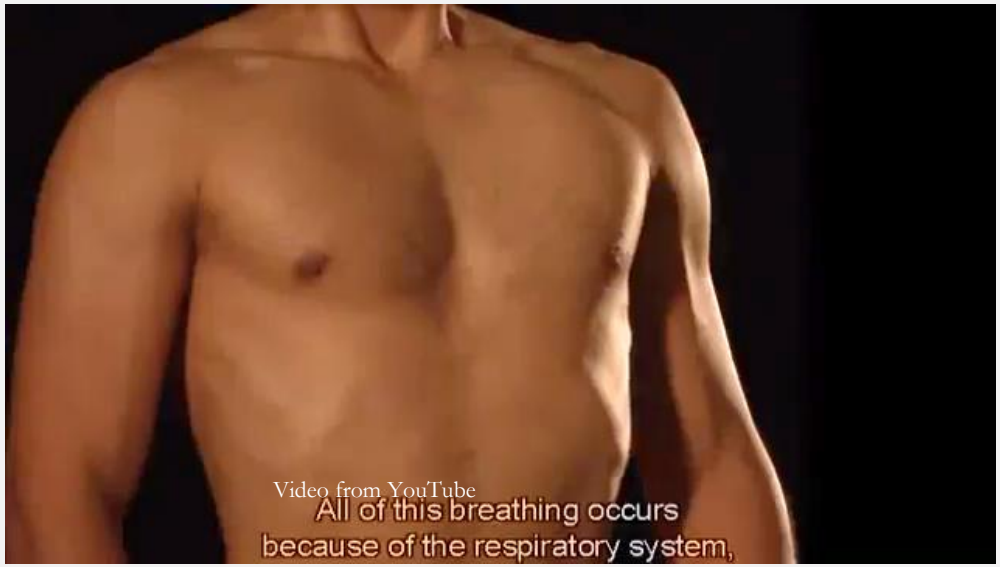
- It depends on several factors:
  A. How the chemical enters the body
  B. The physical form of the chemical
  C. The amount of chemical that actually enters the body - the dose
  D. How toxic (poisonous) the chemical is

How Chemicals Enter the Body

1. Inhalation. Breathing in the chemical	
2. Absorption. The chemical soaks through the skin (wet on the hands, forearms, eyes, face)	
3. Ingestion. Swallowing the chemical	

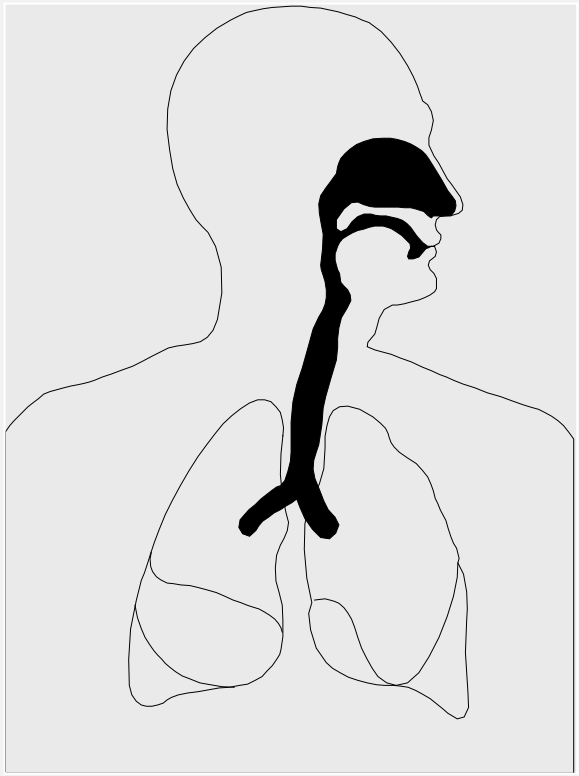
Inhalation (Breathing)

- Chemicals in the air are breathed in through the mouth or nose.
- Gases & vapors are absorbed through the lungs directly into the bloodstream.



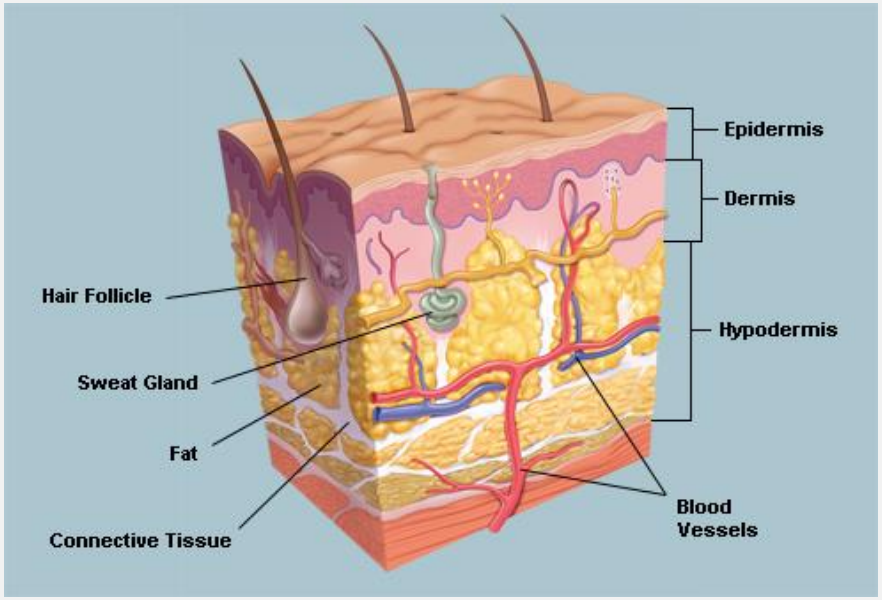
Inhalation (Breathing)

- The size of dust particles or mist droplets can affect where the chemical settles in the respiratory tract.



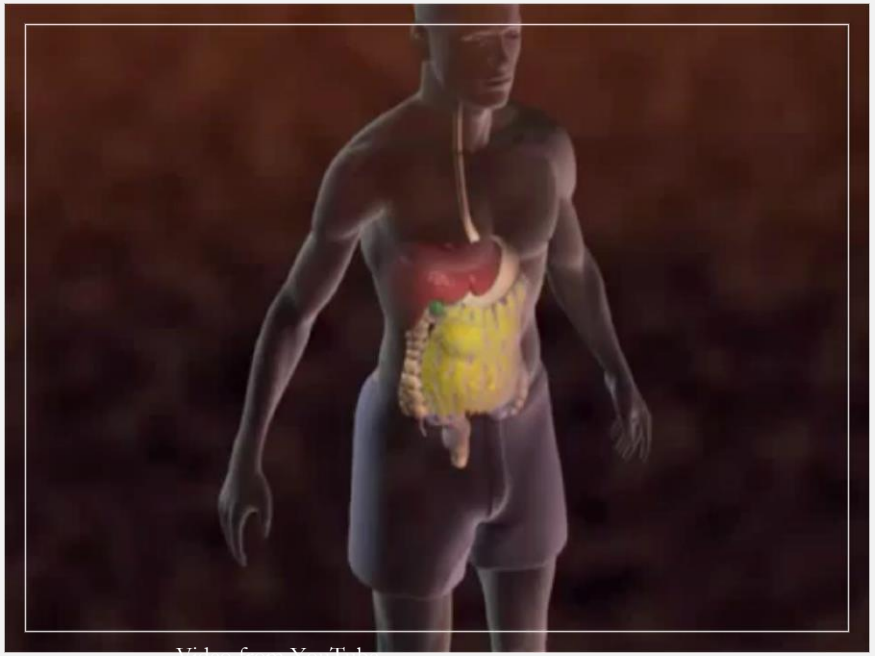
Skin Absorption

- Some chemicals can pass through the skin into the body.
- These chemicals can then cause various health effects.

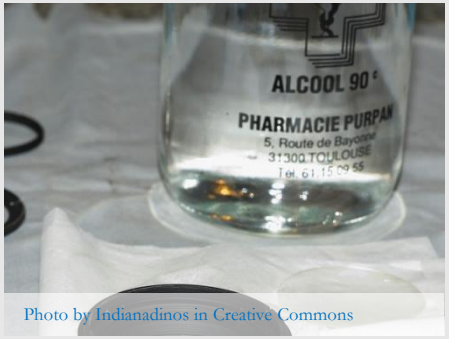


Ingestion (Swallowing).

- Chemicals that are swallowed are absorbed in the digestive tract.
- Chemicals can rub off dirty hands and contaminate food, drinks or tobacco products.
- Chemicals in the air can settle on food or drink and be swallowed.



All chemicals exists in one of three forms:

1. Solid. Like wood dust	 Photo by Jeff Ozvold in Creative Commons
2. Liquid. Like isopropyl alcohol	 Photo by Indianadinos in Creative Commons
3. Gas. Like industrial gases	 Photo by Chris Hunkeler in Creative Commons

Hazardous Chemicals - Dusts

- Some chemicals are solids in the form of powders or dust.
- Dust can be released into the air by cutting, drilling, grinding or sanding.
- Dust can also be stirred up by dry sweeping and inhaled.

Hazardous Chemicals - Dust

- Dust in the air can settle out on work surfaces, cups, plates, utensils, and food.
- The settled dust can be swallowed with food or drinks.
- If the dust is hazardous, it can cause health problems.

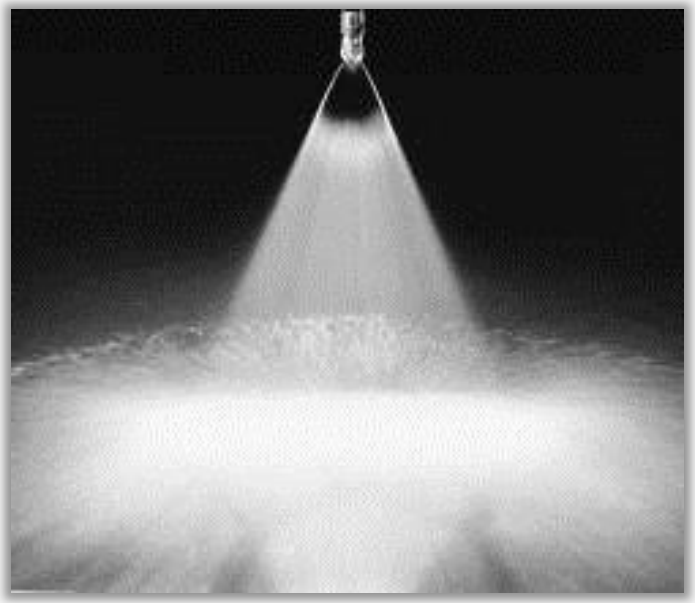
Solids – Fumes and Fibers

- Fumes are extremely small droplets of metal formed when the metal has been vaporized by high temperatures (usually welding)

- Some solids are fibers which can be similar to dusts but they have an elongated shape (like asbestos or fiberglass)

Hazardous Chemicals - Liquids

- Liquid chemicals in direct contact with the skin can cause skin problems.
- Some liquids can be absorbed into the body through the skin.
- Liquids can be sprayed and form mists or evaporate and form vapors which can be inhaled.



Liquids (Mists)

Photo by rawforbeauty.com

- Mists can also be inhaled.
- Mists can settle on the skin and be absorbed into the body.
- Airborne mists can also settle out and contaminate food or drink.

Gases and Vapors

- Gases are chemicals that are in the gas phase at room temperature.
- Vapors evaporate from substances that are liquids or solids at room temperature.
- Gases and vapors enter the body by inhalation.

Toxicity: how poisonous are chemicals?

- Dose

  The effects of any toxic chemical depends on the quantity of a chemical that actually enters the body.

Photo by Jenny Lee Silver Creative Commons

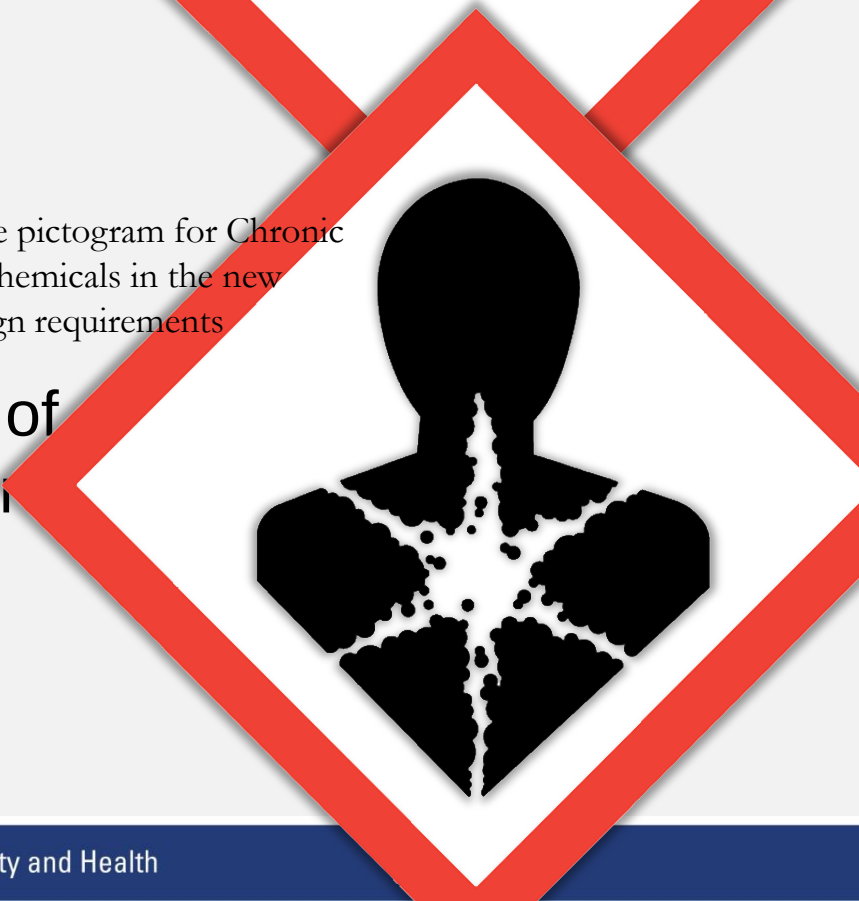
Toxicity: how poisonous and rapidly chemicals affect you?

This is the pictogram for Acute Toxicity chemicals in the new label design requirements

- Acute Toxicity

  The measure of how toxic a chemical is in a single dose over a short period of time.

This is the pictogram for Chronic Toxicity chemicals in the new label design requirements

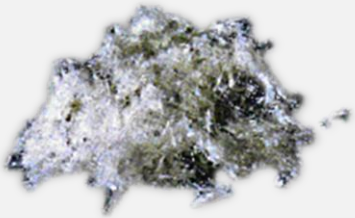


- Chronic Toxicity

  The measure of the toxicity of exposure to a chemical over long period of time.

How poisonous are chemicals?

- Some chemicals will only make you sick if you get an “acute” or high dose all at once. Example – ammonia
- Some chemicals are mainly known for their chronic or long-term effects. Example – asbestos
- Most chemicals have both acute and chronic effects. Example – carbon monoxide

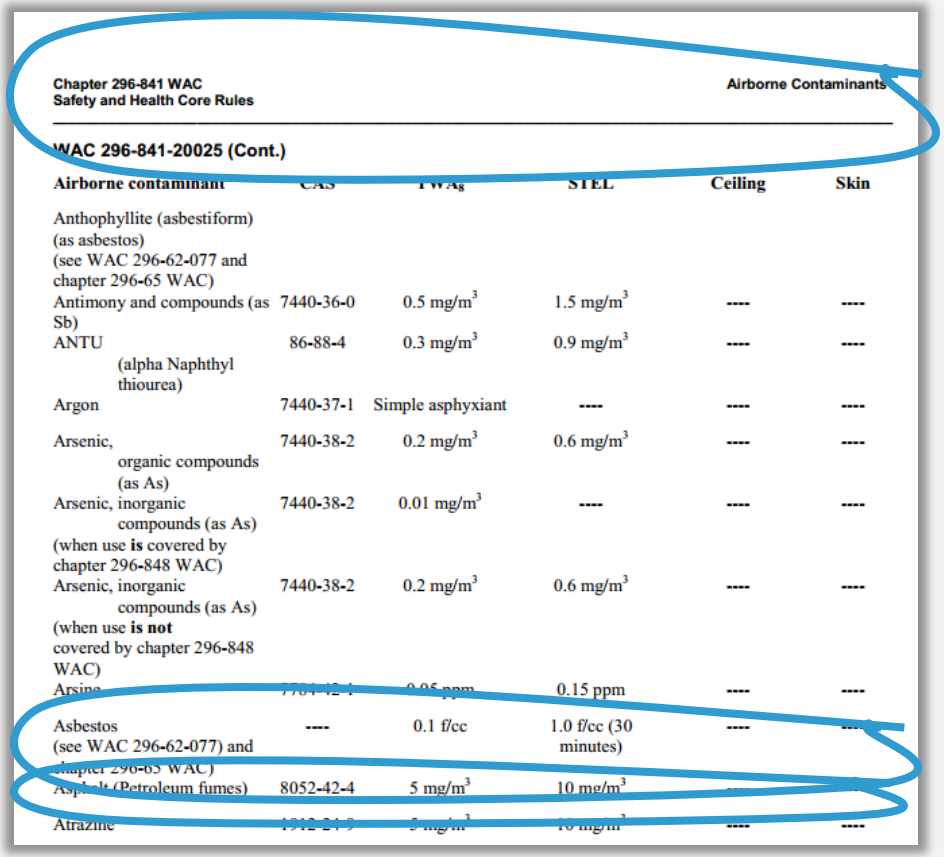


Do toxic chemicals attack specific body parts?

Some chemicals will affect a particular organ rather than the whole body.

How much is too much chemicals exposure?

- Many chemicals have exposure limits, or allowable amounts of a chemical in the air.
- These limits are often called “Permissible Exposure Limits -PELs” or “Threshold Limit Values - TLVs”.



Chapter 296-841 WAC
Safety and Health Core Rules

Airborne Contaminants

WAC 296-841-20025 (Cont.)

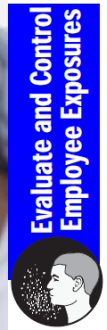
Airborne contaminant	CAS	TWA$_8$	STEL	Ceiling	Skin
Anthophyllite (asbestiform) (as asbestos) (see WAC 296-62-077 and chapter 296-65 WAC)					
Antimony and compounds (as Sb)	7440-36-0	0.5 mg/m^3	1.5 mg/m^3	----	----
ANTU (alpha Naphthyl thiourea)	86-88-4	0.3 mg/m^3	0.9 mg/m^3	----	----
Argon	7440-37-1	Simple asphyxiant	----	----	----
Arsenic, organic compounds (as As)	7440-38-2	0.2 mg/m^3	0.6 mg/m^3	----	----
Arsenic, inorganic compounds (as As) (when use **is** covered by chapter 296-848 WAC)	7440-38-2	0.01 mg/m^3	----	----	----
Arsenic, inorganic compounds (as As) (when use **is not** covered by chapter 296-848 WAC)	7440-38-2	0.2 mg/m^3	0.6 mg/m^3	----	----
Arsine	7784-42-1	0.05 ppm	0.15 ppm	----	----
Asbestos (see WAC 296-62-077) and chapter 296-65 WAC)	----	0.1 f/cc	1.0 f/cc (30 minutes)	----	----
Asphalt (Petroleum fumes)	8052-42-4	5 mg/m^3	10 mg/m^3	----	----
Atrazine	1912-24-9	5 mg/m^3	10 mg/m^3	----	----

So…, there's more than one type of Permissible Exposure Limits or PELs…?

This is an 8-hour, time weighted average limit.

This is typically a 15-minute, time-weighted average limit.

This is an instantaneous limit.



Evaluate and Control Employee Exposures

Chapter 296-841 WAC

Rule

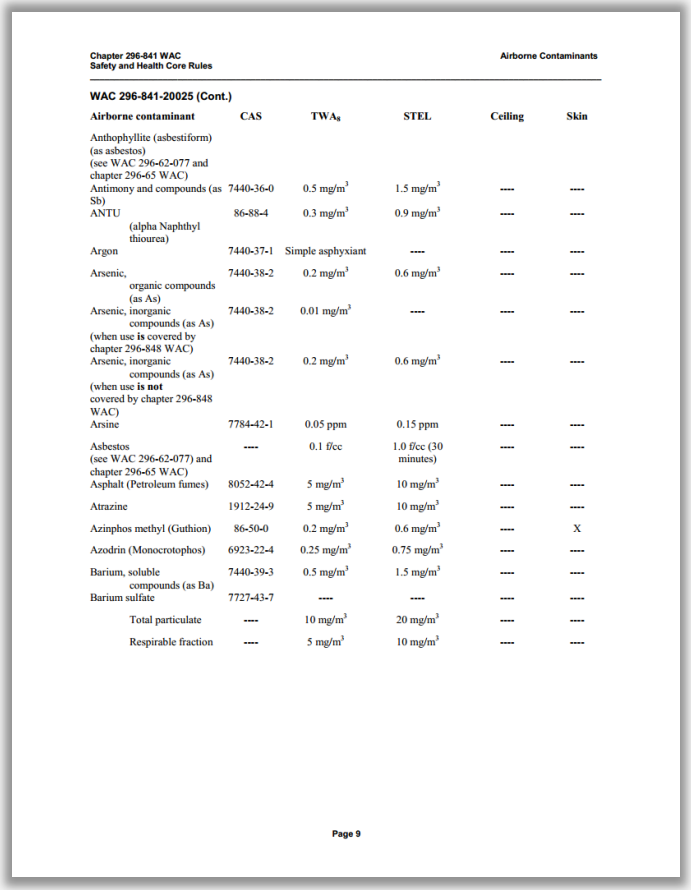
Table 3

Permissible Exposure Limits (PELs) for Airborne Contaminants

Airborne contaminant		T	STEL	Ceiling	
Anthrophyllite (asbestiform) (as asbestos) (see WAC 296-62-077 and chapter 296-65 WAC)					
Antimony and compounds (as Sb)	7440-36-0	0.5 mg/m³	1.5 mg/m³	----	----
ANTU (alpha Naphthyl thiourea)	86-88-4	0.3 mg/m³	0.9 mg/m³	----	----
Argon	7440-37-1	Simple asphyxiant	----	----	----
Arsenic, organic compounds (as As)	7440-38-2	0.2 mg/m³	0.6 mg/m³	----	----
Arsenic, inorganic compounds (as As) (when use is covered by chapter 296-848 WAC)	7440-38-2	0.01 mg/m³	----	----	----
Arsenic, inorganic compounds (as As) (when use is **not** covered by chapter 296-848 WAC)	7440-38-2	0.2 mg/m³	0.6 mg/m³	----	----
Arsine	7784-42-1	0.05 ppm	0.15 ppm	----	----
Asbestos (see WAC 296-62-077) and chapter 296-65 WAC	----	0.1 f/cc	1.0 f/cc (30 minutes)	----	----
Asphalt (Petroleum fumes)	8052-42-4	5 mg/m³	10 mg/m³	----	----

Is there a book or website to find chemical limits?

- DOSH has a PDF with the Safety Standards regarding Permissible Exposure Limits or PELs for Washington state.
- You can review it on DOSH's webpage at http://www.lni.wa.gov/safety/rules/chapter/841/



Chapter 296-841 WAC
Safety and Health Core Rules

Airborne Contaminants

WAC 296-841-20025 (Cont.)

Airborne contaminant	CAS	TWA_8	STEL	Ceiling	Skin
Anthophyllite (asbestiform) (as asbestos) (see WAC 296-62-077 and chapter 296-65 WAC)					
Antimony and compounds (as Sb)	7440-36-0	0.5 mg/m^3	1.5 mg/m^3	----	----
ANTU (alpha Naphthyl thiourea)	86-88-4	0.3 mg/m^3	0.9 mg/m^3	----	----
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Arsine	7784-42-1	0.05 ppm	0.15 ppm	----	----
Asbestos (see WAC 296-62-077) and chapter 296-65 WAC)	----	0.1 f/cc	1.0 f/cc (30 minutes)	----	----
Asphalt (Petroleum fumes)	8052-42-4	5 mg/m^3	10 mg/m^3	----	----
Atrazine	1912-24-9	5 mg/m^3	10 mg/m^3	----	----
Azinphos methyl (Guthion)	86-50-0	0.2 mg/m^3	0.6 mg/m^3	----	X
Azodrin (Monocrotophos)	6923-22-4	0.25 mg/m^3	0.75 mg/m^3	----	----
Barium, soluble compounds (as Ba)	7440-39-3	0.5 mg/m^3	1.5 mg/m^3	----	----
Barium sulfate	7727-43-7	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----

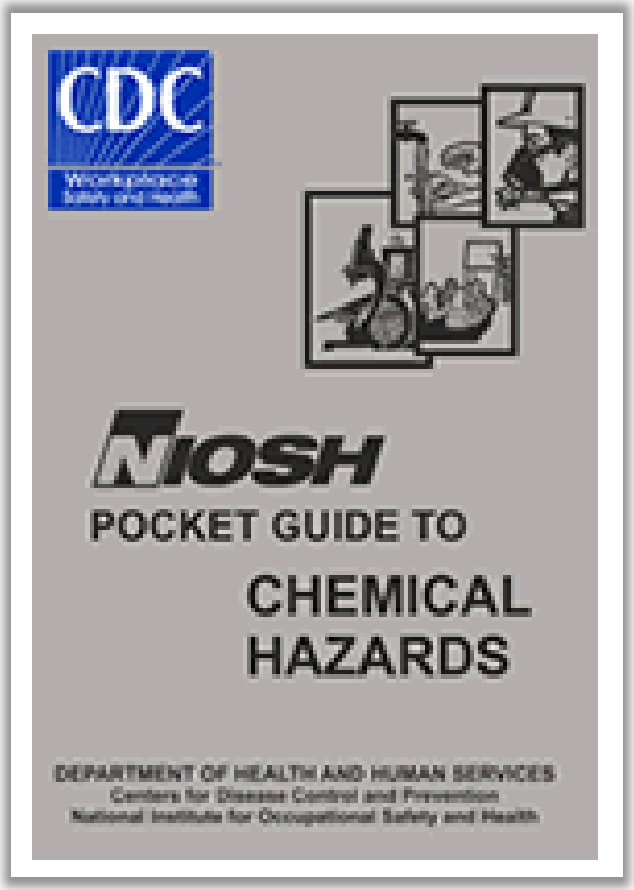
Page 9

Click on this page to open a new window with a PDF copy of the Permissible Exposure Limits.

Is there another book or website to find chemical limits?

- Sure. The NIOSH Pocket Guide has the limits for many chemicals. It can be found in the website of the National Institute for Occupational Safety and Health or NIOSH:

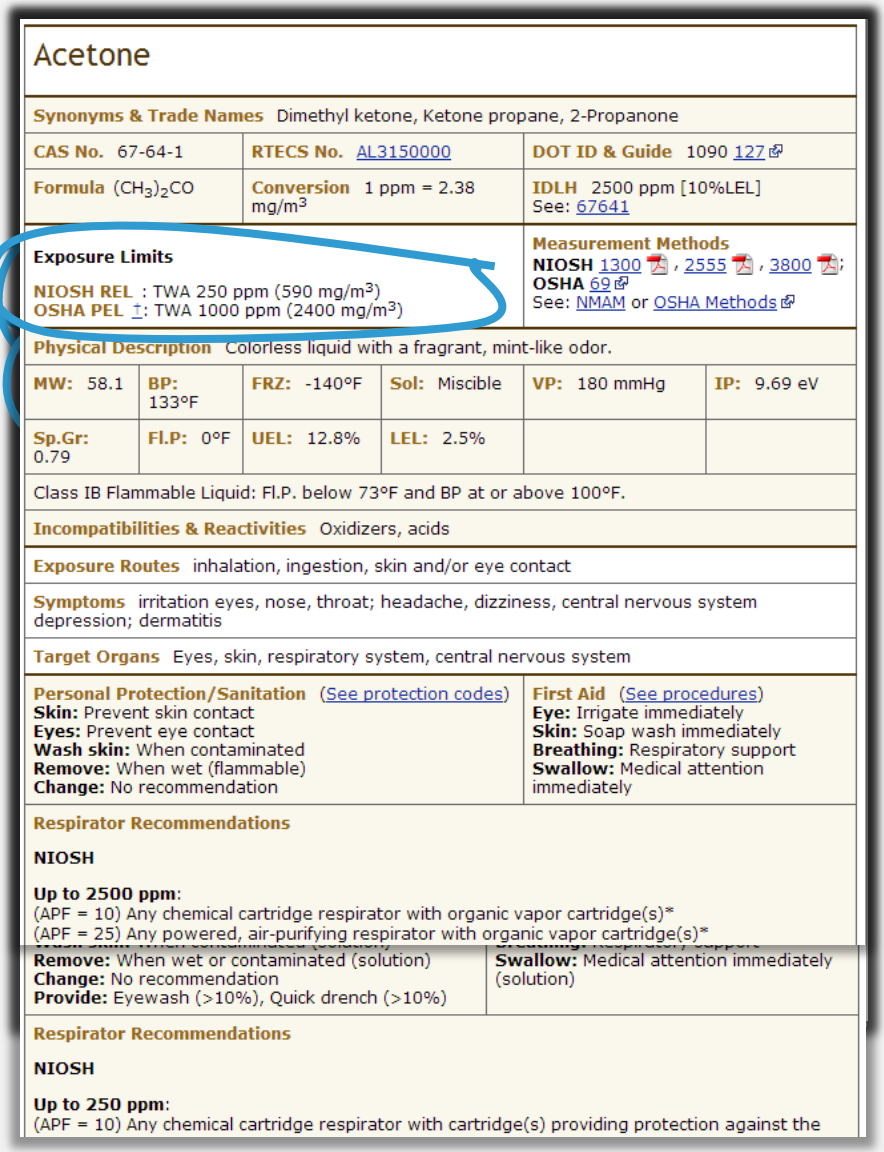
  www.cdc.gov/niosh/npg



Click on the image of the book to open the NIOSH website in a new window.

These are chemicals limits examples by NIOSH

These examples show limits recommended by NIOSH (REL) and “Permissible Exposure Limits” by OSHA.



Acetone

Synonyms & Trade Names Dimethyl ketone, Ketone propane, 2-Propanone

CAS No. 67-64-1	**RTECS No.** AL3150000	**DOT ID & Guide** 1090 127
Formula $(CH_3)_2CO$	**Conversion** 1 ppm = 2.38 mg/m³	**IDLH** 2500 ppm [10%LEL] See: 67641

Exposure Limits

NIOSH REL : TWA 250 ppm (590 mg/m³)
OSHA PEL †: TWA 1000 ppm (2400 mg/m³)

Measurement Methods
NIOSH 1300 , 2555 , 3800;
OSHA 69
See: NMAM or OSHA Methods

Physical Description Colorless liquid with a fragrant, mint-like odor.

MW: 58.1	**BP:** 133°F	**FRZ:** -140°F	**Sol:** Miscible	**VP:** 180 mmHg	**IP:** 9.69 eV
Sp.Gr: 0.79	**Fl.P:** 0°F	**UEL:** 12.8%	**LEL:** 2.5%		

Class IB Flammable Liquid: Fl.P. below 73°F and BP at or above 100°F.

Incompatibilities & Reactivities Oxidizers, acids

Exposure Routes inhalation, ingestion, skin and/or eye contact

Symptoms irritation eyes, nose, throat; headache, dizziness, central nervous system depression; dermatitis

Target Organs Eyes, skin, respiratory system, central nervous system

Personal Protection/Sanitation (See protection codes)
Skin: Prevent skin contact
Eyes: Prevent eye contact
Wash skin: When contaminated
Remove: When wet (flammable)
Change: No recommendation

First Aid (See procedures)
Eye: Irrigate immediately
Skin: Soap wash immediately
Breathing: Respiratory support
Swallow: Medical attention immediately

Respirator Recommendations

NIOSH

Up to 2500 ppm:
(APF = 10) Any chemical cartridge respirator with organic vapor cartridge(s)*
(APF = 25) Any powered, air-purifying respirator with organic vapor cartridge(s)*

Remove: When wet or contaminated (solution)
Change: No recommendation
Provide: Eyewash (>10%), Quick drench (>10%)

Swallow: Medical attention immediately (solution)

Respirator Recommendations

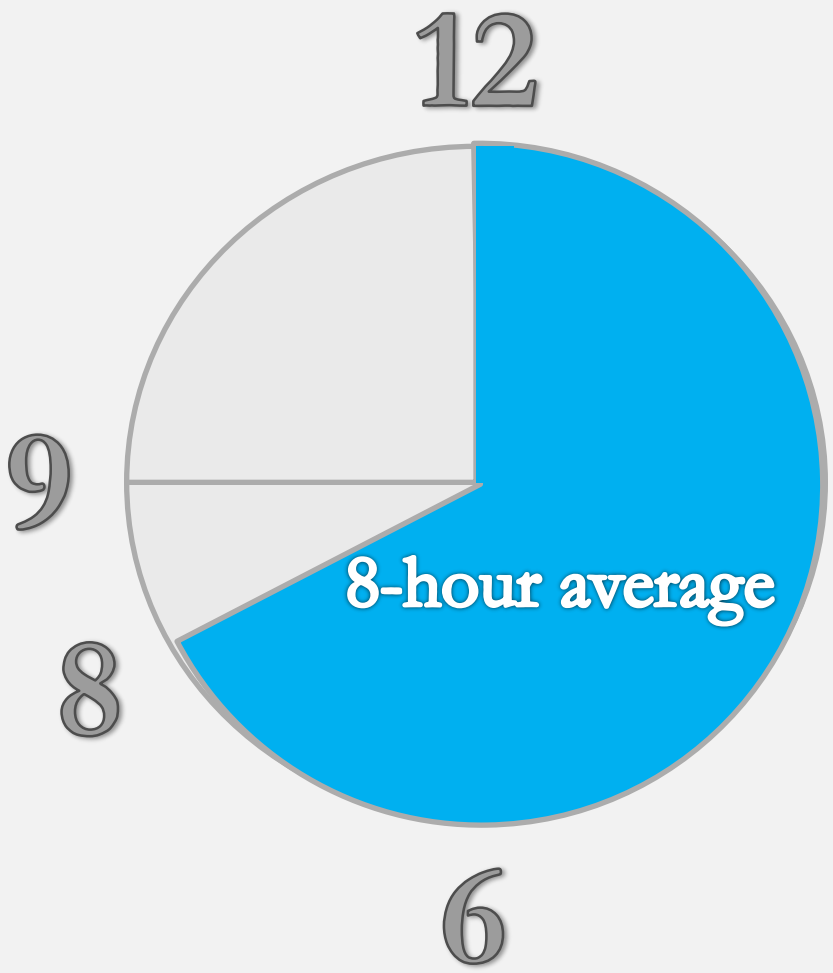
NIOSH

Up to 250 ppm:
(APF = 10) Any chemical cartridge respirator with cartridge(s) providing protection against the

How long are these limits for?

- They are based on 8-hour average exposure or ceiling or peak levels.

- Levels must be kept below these limits for safety.



Cancer is a scary ailment…

- Carcinogens are cancer-causing compounds.
- Some chemicals are known human carcinogens, others are only suspected as carcinogens.

Are there safety rules to working with carcinogens?

- DOSH has regulations covering the general use of carcinogens, and has specific regulations for several known human carcinogens.

Carcinogens

- DOSH has specific regulations on the following carcinogens:
  - Vinyl Chloride
  - Acrylonitrile
  - 1,2,-Dibromo-3-chloropropane (DBCP)
  - Arsenic
  - Ethylene Oxide
  - Cadmium
  - Butadiene
  - Methylene Chloride
  - Benzene
  - Hexavalent Chromium

There are chemicals that affect genetic material!

- Teratogens

  Teratogens are compounds that can harm the developing fetus, causing birth defects or death.

- Mutagens

  Mutagens cause genetic mutations or changes. These mutations can cause birth defects or other problems in following generations or may lead to cancer in the exposed person.

There are chemicals that cause allergic responses.

- Sensitizers

Sensitizers can “switch on” a reaction in an individual worker.

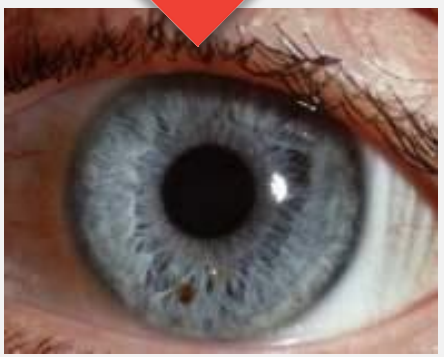
The reaction to a sensitizer depends upon the individual worker.

Once a worker becomes sensitized to a compound, smaller and smaller exposures can cause a reaction, and the reactions can become more severe.

There are chemicals that cause injuries, burns.

- Acids and bases (caustics) are common corrosive chemicals.

- Corrosive chemicals are capable of damaging eyes, skin and the respiratory system.



Corrosive Chemicals - Skin

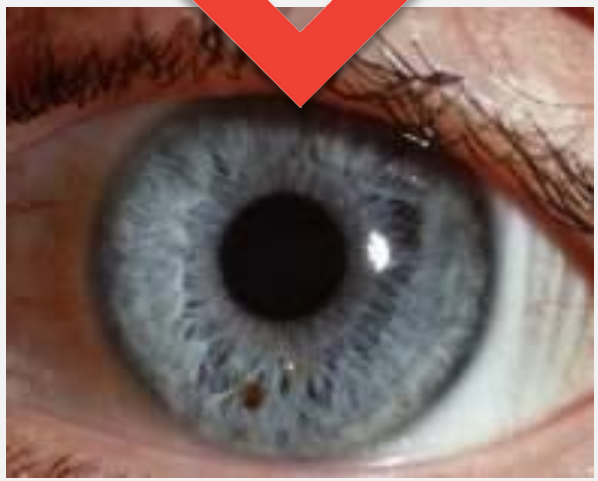
- Corrosives can cause visible skin burns or damage.

- The extent of skin damage depends on how long the corrosive is on the skin and how concentrated the corrosive is.

Corrosive Chemicals - Inhalation and Eyes

- Inhalation of corrosive mists or vapors can cause severe bronchial irritation.

- Corrosives are especially damaging to the eyes.



Examples of Corrosive Chemicals

- Sulfuric Acid
- Ammonia
- Chromic acid
- Lye
- Acetic Acid
- Chlorine

Photo by Rich Moffitt in Creative Commons

Batteries contain sulfuric acid

For protection against corrosive chemicals use…

Photo by Lower Columbia College in Creative Commons

Photo by Jennifer Tweedie in Creative Commons

- Protective gloves & clothing
  Eyewashes
  Goggles
  Water (for splashes on the skin)

Photo by Jessica Merz in Creative Commons

There are liquids that can ignite!

- The vapor of a flammable liquid ignites and causes fire or explosion – not the liquid itself.
- The flammability of a liquid depends on its physical properties:
  A. Vapor Pressure
  B. Flash Point
  C. Limits of Flammability
  D. Vapor Density

Flammable liquids generate Vapor Pressure

- Vapor Pressure is a measure of how fast a liquid evaporates.
- The higher the Vapor Pressure the more rapidly the liquid will evaporate.
- Vapor Pressure goes up and down with the temperature of the liquid.

Flammable Liquids - Flashpoint

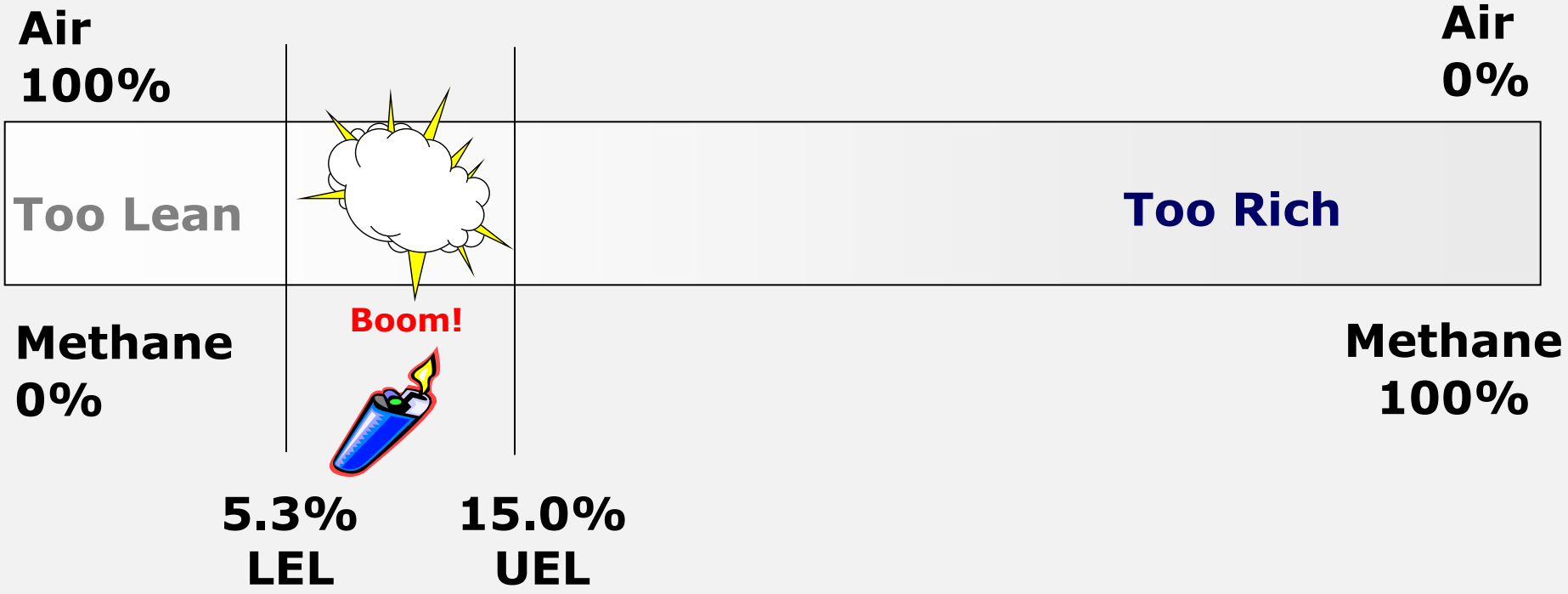
- The flash point is the lowest temperature that a flammable liquid can generate enough vapor to form a mixture with air that will ignite.

Are there limits for Flammability?

- The limits of flammability mark the range that a mixture of air and vapor is flammable.
- Mixtures can be too lean (not enough vapor) or too rich (too much vapor) to ignite and burn.

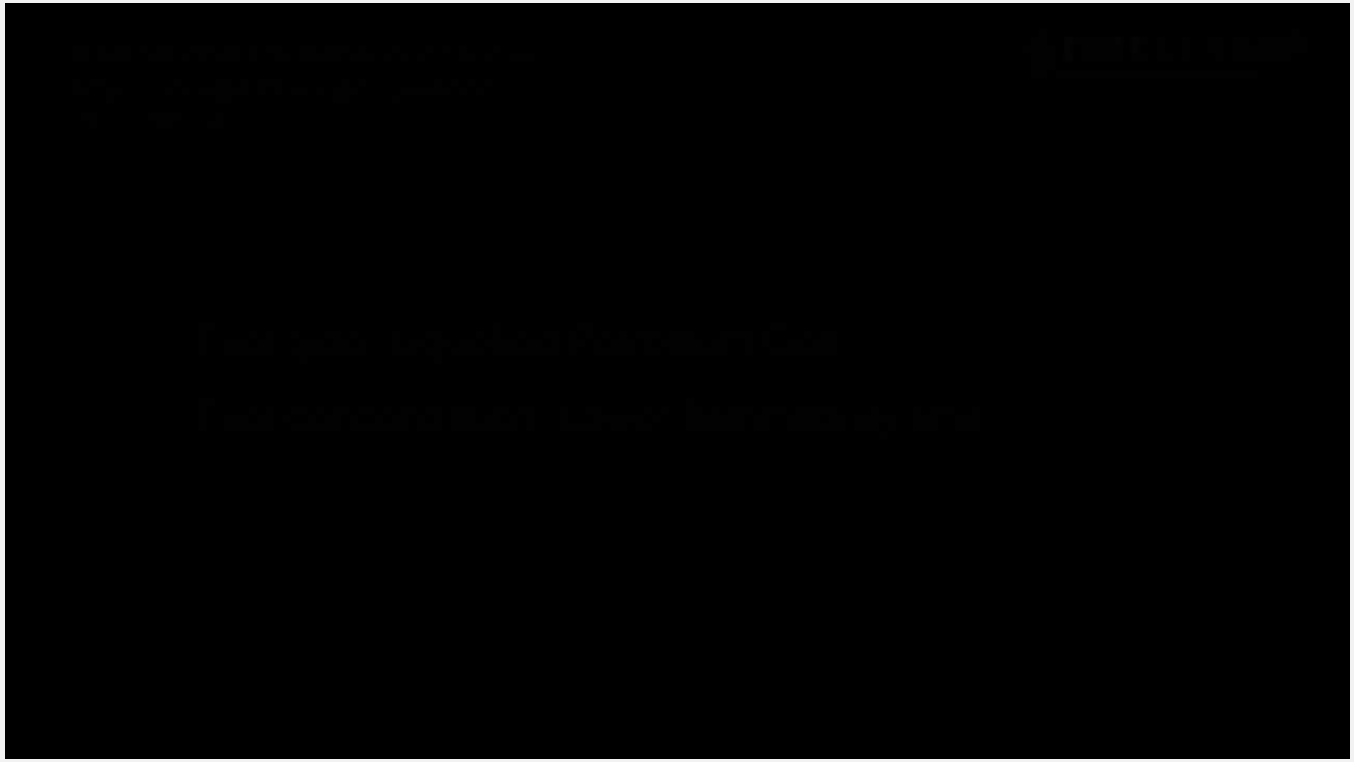
Explosive Limits Example

Methane



LFL = Lower explosive limit UFL = Upper explosive limit

Flammable Liquids Lower Explosive Limit (LEL)



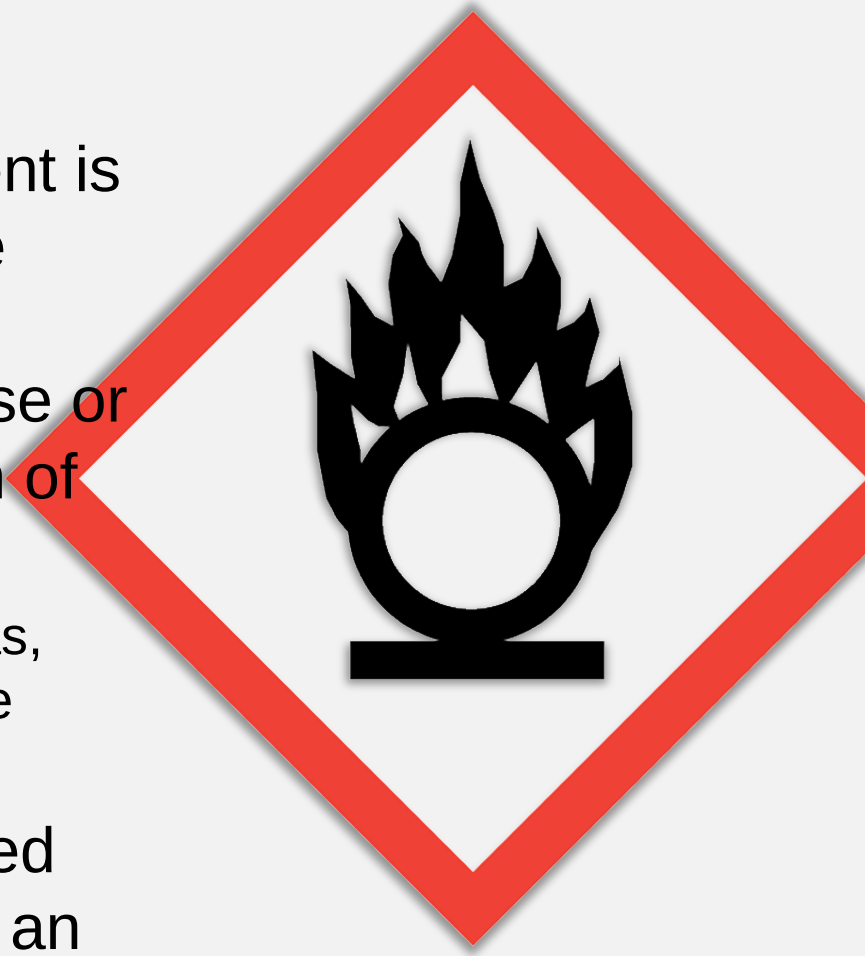
- In most work situations, the “lower explosive limit” (LEL) is the main concern.
- Vapors from flammable liquids can be found in the workplace, but are often too diluted to catch fire or explode.
- However, these vapors can quickly go above the LEL in small room or confined space like a tank.

Flammable Liquids Vapor Density

- "Vapor density" is a measure of how heavy a vapor is compared to air.
- Vapors with a density greater than air can flow like a liquid collect near the floor.
- This may create a fire or explosion hazard if the vapor flows to an ignition source.

Oxidizer

- An oxidizer or oxidizing agent is a substance that may not be combustible itself, but by producing oxygen, may cause or contribute to the combustion of other material.
  A. Examples include oxygen gas, hydrogen peroxide and some acids.
- A flammable substance mixed with an oxidizer will result in an explosion



Hazards of Metals

- Metals can be both physical hazards and health hazards.
- Some metals can ignite and explode – magnesium, lithium or dusts/filings of other metals such as aluminum
- Some metals are almost non-toxic – iron, aluminum
- Others are very toxic – mercury, lead, cadmium, beryllium

This is the list of operations and work areas where hazardous chemicals are present

- *[List where hazardous chemicals are used]*

The following products are used at our site:

- *[List products and where they are used]*

Washington State Department of Labor & Industries
Division of Occupational Safety and Health

Keep Washington safe and working

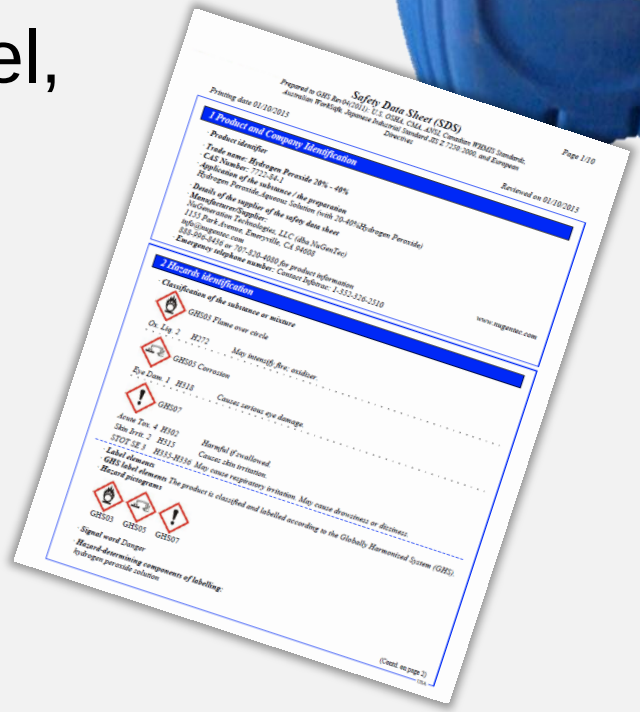
Globalized Harmonization System

*The following slides meet the new training requirements for Hazard Communication (**GHS**)*

How do you get information about hazardous chemicals?

You can get information two ways:

- from the product label,
- from the product Safety Data Sheet or SDS.

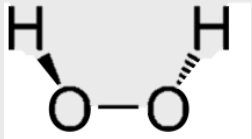


What must be on the product label?

SAMPLE LABEL

Why I must review a Safety Data Sheet or SDS?

1. Ingredients. Tells you what chemicals are in the product



· ***Product identifier***

· ***Trade name: Hydrogen Peroxide 20% - 40%***
· ***CAS Number:*** *7722-84-1*
· ***Application of the substance / the preparation***
Hydrogen Peroxide,Aqueous Solution (with 20-40%Hydrogen Peroxide)

2. Hazards. Informs you of the hazards in the chemical

3. Safe handling. Also gives you instructions how to protect yourself

Let's tour the 16 sections of the SDS

Section 16: Other information, including date of preparation or last revision.

Safety Data Sheet (SDS)

Prepared to GHS Rev04(2011): U.S. OSHA, CMA, ANSI, Canadian WHMIS Standards, Australian WorkSafe, Japanese Industrial Standard JIS Z 7250:2000, and European Directives

Safety Data Sheet (SDS)

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Printing date 01/10/2013 Reviewed on 01/10/2013

Trade name: Hydrogen Peroxide 20% - 40%

(Contd. of page 9)

P102 Keep out of reach of children.
P103 Read label before use.
P221 Take any precaution to avoid mixing with combustibles.
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/physician.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Abbreviations and acronyms:**
ADR: Accord european sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)

USA

H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

· **Precautionary statements**
P101 If medical advice is needed, have product container or label at hand.

(Contd. on page 10)

USA

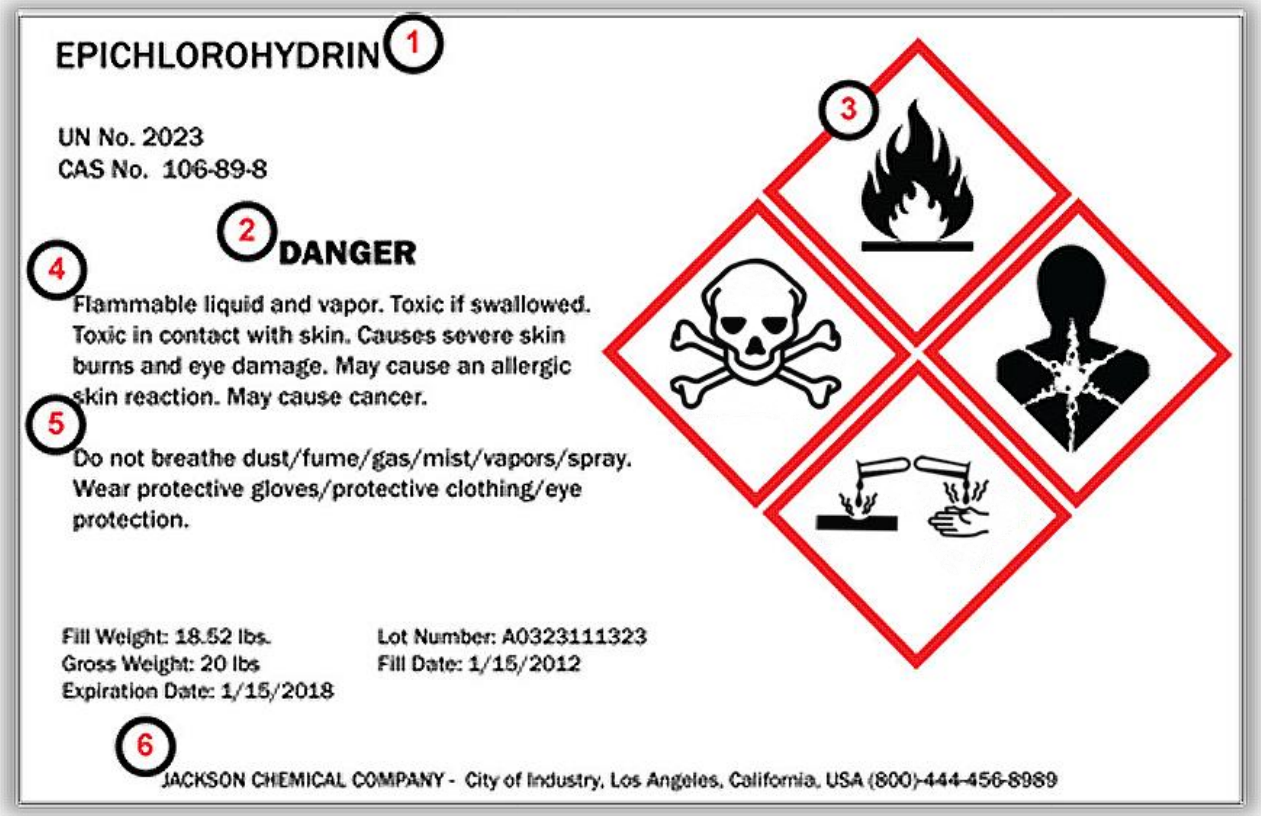
Let's practice…

You were asked to fill drums with ***[use a common chemical actually in use at your site]***

Epichlorohydrin or EPI for short.

Once in the area, you look for the label, and you find this label…

This label is warning you of multiple hazards. What are the four pictograms warning you about?



The four pictograms on the label are telling you…

- DANGER!
- Causes severe skin burns and eye damage;
- Do not breath dusts or mists;
- If swallowed: Rinse mouth. DO NOT induce vomiting;
- Store locked up
- Etc.

This label is warning you of multiple hazards. Find how can you protect yourself.

Another Example Label

Signal Word

Product Identifier

Pictogram

ToxiFlam (Contains: XYZ)

Danger! Toxic If Swallowed, Flammable Liquid and Vapor

Hazard Statement

Do not eat, drink or use tobacco when using this product. Wash hands thoroughly after handling. Keep container tightly closed. Keep away from heat/sparks/open flame. – No smoking. Wear protective gloves and eye/face protection. Ground container and receiving equipment. Use explosion-proof electrical equipment. Take precautionary measures against static discharge. Use only non-sparking tools. Store in cool/well-ventilated place.

Precautionary Statement

IF SWALLOWED: Immediately call a POISON CONTROL CENTER or doctor/physician. Rinse mouth.

In case of fire, use water fog, dry chemical, CO_2 , or "alcohol" foam.

See Material Safety Data Sheet for further details regarding safe use of this product

MyCompany, MyStreet, MyTown, NJ 00000, Tel: 444 999 9999

Contact Information

Where in the label can I learn how to protect myself from the effects of the chemical?

Correct! The Precautionary Statement has the information I need…

Keep container tightly closed.
Keep away from heat/sparks/open flame-No smoking.
Use only outdoors or in a well-ventilated area.
Do not breath fume/gas/mist/vapours/spray.
Wear protective gloves and eye/face protection [as specified….]
Ground/bond container and receiving equipment.

IN CASE OF FIRE use [as specified] for extinction

FIRST AID
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
Call a Poison Center or doctor/physician if you feel unwell.

Store in a cool, well-ventilated place.

What do these 9 pictograms mean?

Extremely Toxic

Toxic

Health Hazard

Corrosive

Explosive/Reactive

Flammable

Gas Under Pressure

Oxidizer

Aquatic Toxicity

These are the 3 pictograms used for warning of Health Hazards

- These first 3 pictograms cover health hazards of chemicals that can harm you if they get inside your body.

Acute Toxicity

Toxic

Chronic Health Hazard

Physical Hazards

- These 5 pictograms warn of physical hazards – the chemical will either chemically burn your skin, blow up, burn up or make a fire worse.

Corrosive

Flammable

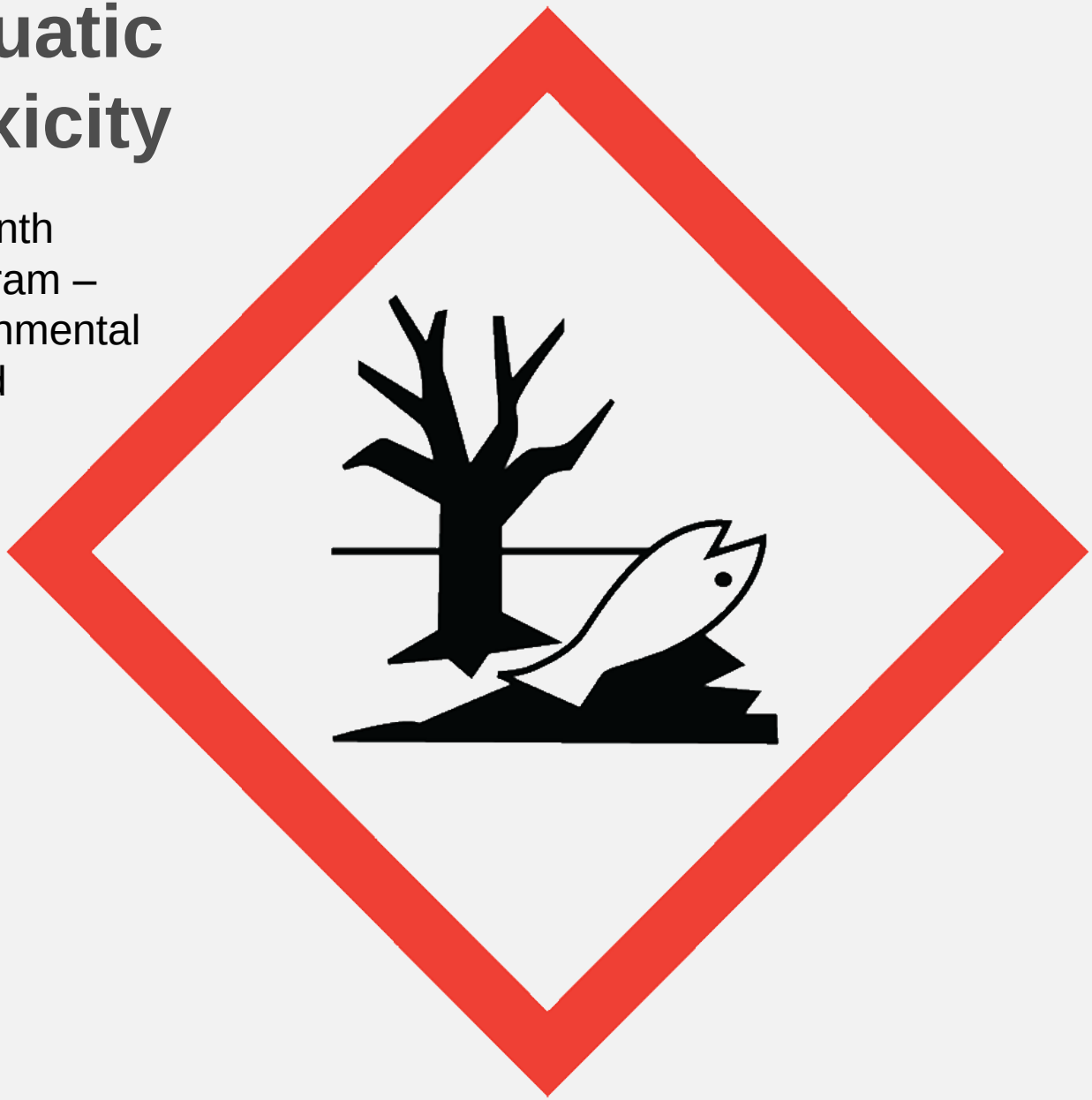
Explosive

Oxidizer

Gas Under Pressure

Aquatic Toxicity

- The Ninth Pictogram – Environmental Hazard



In our site, Safety Data Sheets or SDS are located in *the following locations*

[List locations, or contact name to find SDSs]

The air sampling results can be found at the following location

[Provide location information and directions here]

You can protect yourself from hazardous chemicals by:

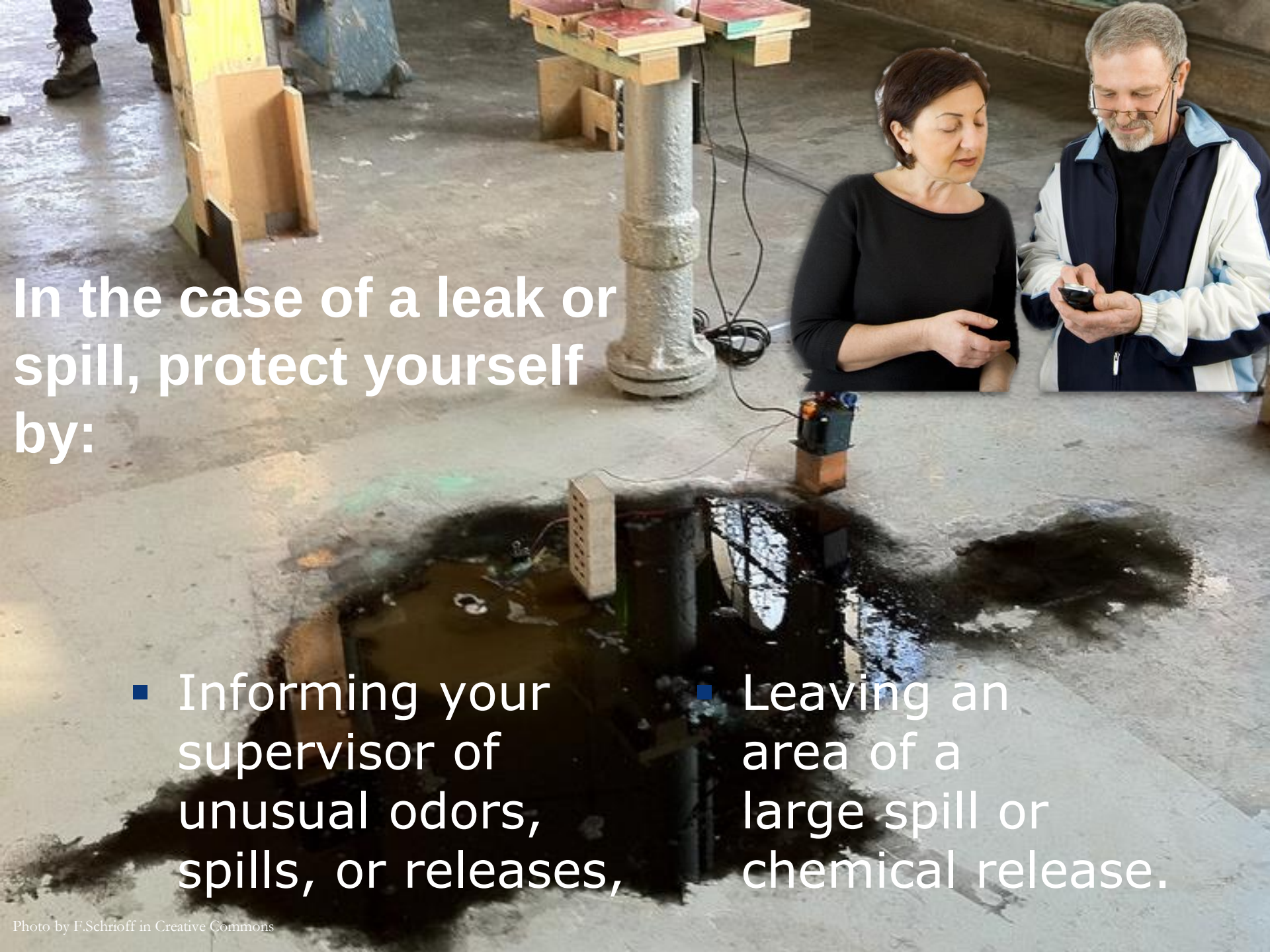
- Knowing what's in the products you work with,
- Using the smallest amount of a chemical to do the job,
- Maintaining machinery and equipment to prevent leaks or releases,

Also you should consider protection from hazardous chemicals by:

- Using available ventilation to reduce amounts of chemicals in the air,
- Keeping lids, doors or covers closed on chemical processes,
- Wearing necessary personal protective equipment.

Photo by Environmental Detroit in Creative Commons

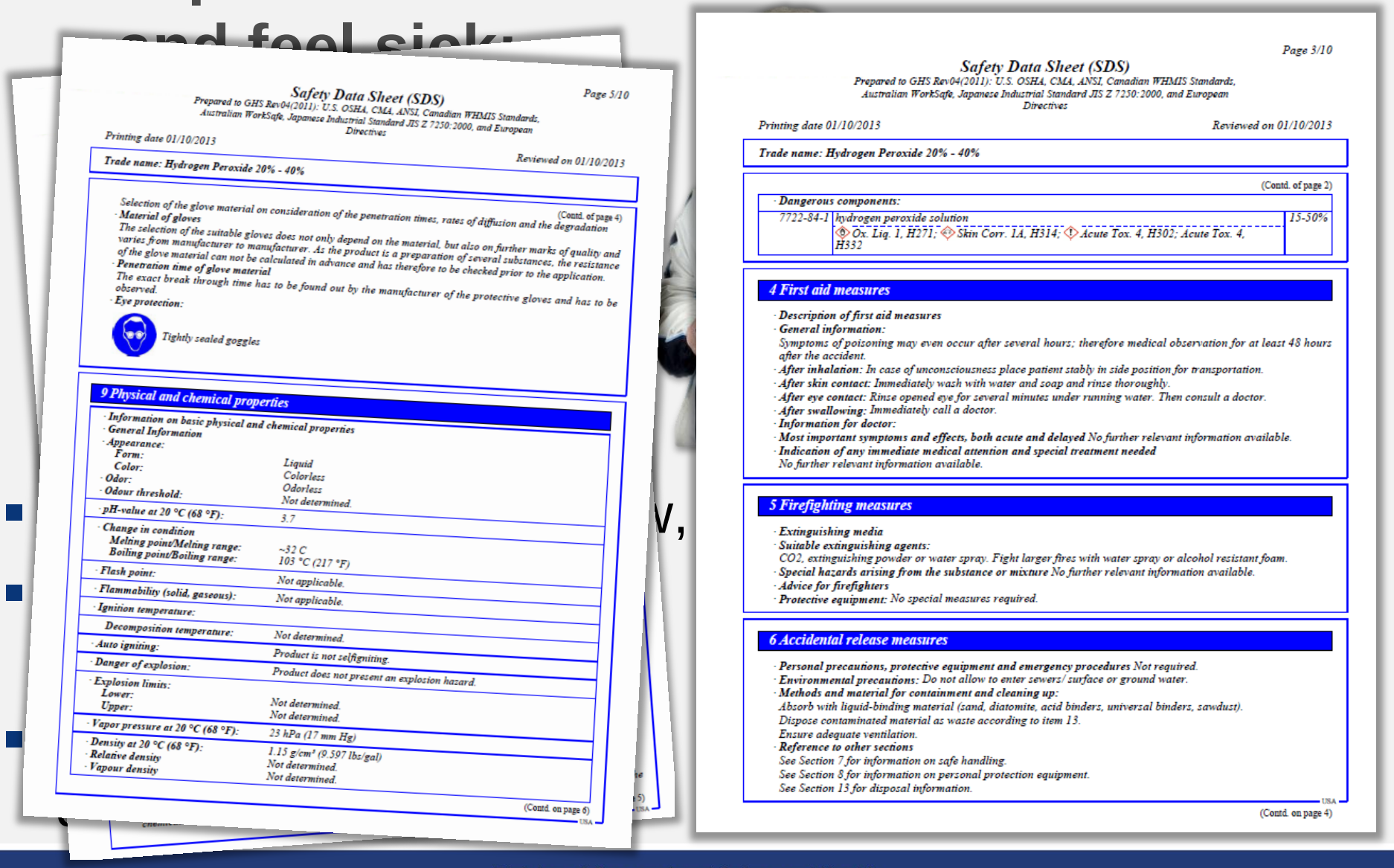
Photo by Savannah River Site in Creative Commons



In the case of a leak or spill, protect yourself by:

- Informing your supervisor of unusual odors, spills, or releases,
- Leaving an area of a large spill or chemical release.

If you have been exposed to a chemical and feel sick:



Safety Data Sheet (SDS)
Prepared to GHS Rev04(2011): U.S. OSHA, CMA, ANSI, Canadian WHMIS Standards, Australian WorkSafe, Japanese Industrial Standard JIS Z 7250:2000, and European Directives

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Printing date 01/10/2013 Reviewed on 01/10/2013

Trade name: Hydrogen Peroxide 20% - 40%

(Contd. of page 4)
· Material of gloves
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· Penetration time of glove material
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· Eye protection:
Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties	
· General Information	
· Appearance:	
Form:	Liquid
Color:	Colorless
· Odor:	Odorless
· Odour threshold:	Not determined.
· pH-value at 20 °C (68 °F):	3.7
· Change in condition	
Melting point/Melting range:	~32 C
Boiling point/Boiling range:	105 °C (217 °F)
· Flash point:	Not applicable.
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	
Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapor pressure at 20 °C (68 °F):	23 hPa (17 mm Hg)
· Density at 20 °C (68 °F):	1.15 g/cm³ (9.597 lbs/gal)
· Relative density	Not determined.
· Vapour density	Not determined.

(Contd. on page 6)
USA

Safety Data Sheet (SDS)
Prepared to GHS Rev04(2011): U.S. OSHA, CMA, ANSI, Canadian WHMIS Standards, Australian WorkSafe, Japanese Industrial Standard JIS Z 7250:2000, and European Directives

Page 3/10

Printing date 01/10/2013 Reviewed on 01/10/2013

Trade name: Hydrogen Peroxide 20% - 40%

(Contd. of page 2)
· Dangerous components:

7722-84-1	hydrogen peroxide solution Ox. Liq. 1, H271; Skin Corr. 1A, H314; Acute Tox. 4, H302; Acute Tox. 4, H332	15-50%

4 First aid measures

· Description of first aid measures
· General information:
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
· After inhalation: In case of unconsciousness place patient stably in side position for transportation.
· After skin contact: Immediately wash with water and soap and rinse thoroughly.
· After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
· After swallowing: Immediately call a doctor.
· Information for doctor:
· Most important symptoms and effects, both acute and delayed No further relevant information available.
· Indication of any immediate medical attention and special treatment needed
No further relevant information available.

5 Firefighting measures

· Extinguishing media
· Suitable extinguishing agents:
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· Special hazards arising from the substance or mixture No further relevant information available.
· Advice for firefighters
· Protective equipment: No special measures required.

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures Not required.
· Environmental precautions: Do not allow to enter sewers/ surface or ground water.
· Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

USA
(Contd. on page 4)

These are the methods and equipment available in our Worksite

[List here the methods and equipment available to prevent an exposure]

Hazard Communication Quiz

The following questions are optional. They can be used to check your employees understanding of this training and promote discussion. You can add more questions for a short written or verbal quiz.

Question 1

What are the three routes of entry of chemicals into the body?

a) Ears, eyes and mouth

b) Nose, mouth and skin

c) Swallowing, inhaling and drinking

d) Ingestion, inhalation and absorption

Question 2

What is acute toxicity of a chemical?

a) A good-looking chemical

b) The chemical is toxic only if you drink it

c) The chemical will harm you only after years of exposure

d) The chemical can harm you in a single dose over a short period of time

Question 3

When is a chemical vapor flammable?

a) Only if it is really hot
b) Only when the amount is above the UEL
c) When the amount in the air is above the LEL
d) Whenever there is an open flame

Question 4

How can you find out what chemical is in a product we use?

a) Ask your supervisor
b) Look on the label
c) Read the SDS
d) Ask your co-worker

Question 5

What should you do if there is a large chemical spill in your work area?

a) Run out of the building
b) Leave the area and inform your supervisor and coworkers
c) Clean it up right away
d) Call 911

Question 6

Which one of these pictograms means the product is flammable?

a)

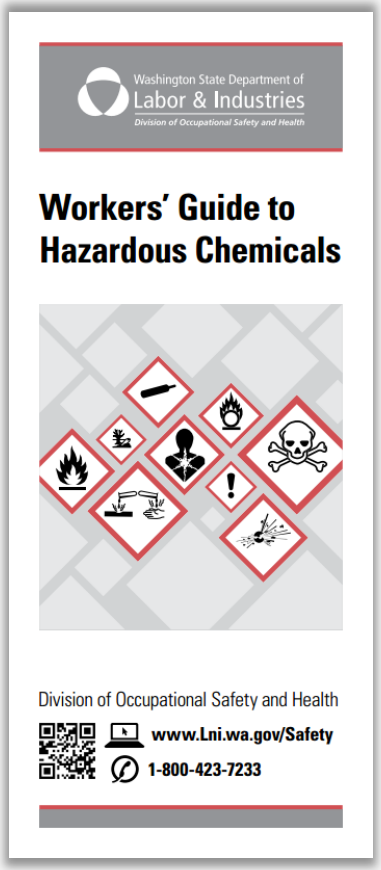
b)

c)

Washington State Department of Labor & Industries
Division of Occupational Safety and Health

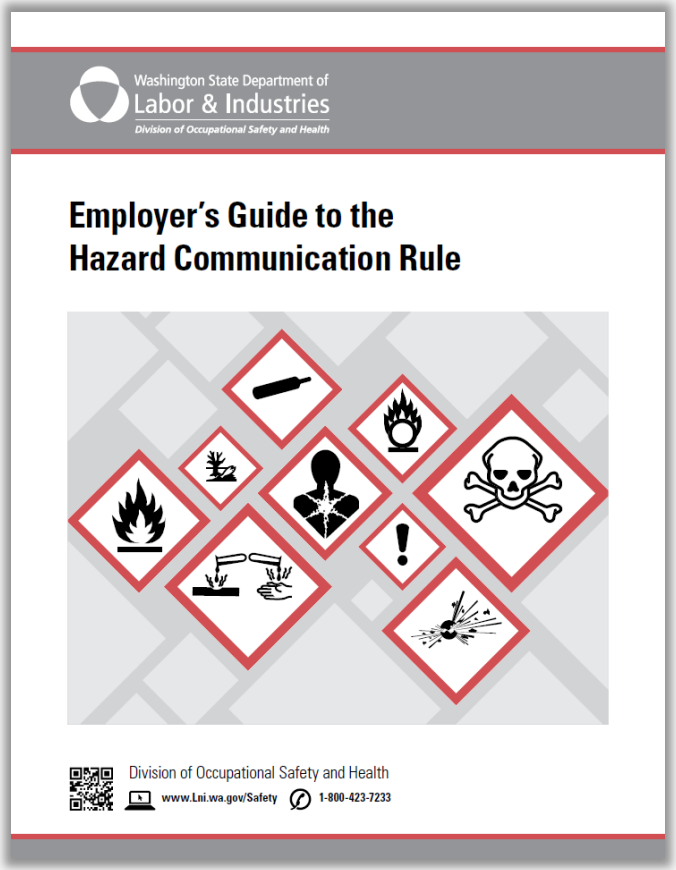
Keep Washington safe and working

Click on any of these links for additional support sources…



Chemical Hazard Communication Program

Sample



Links to additional support sources

- ✓ *Request Consultation*
- ✓ *Hazard Communication and the Globally Harmonized System (GHS)*